

TEXAS TREASURY WARRANTS, 1861-1865: A TEST OF THE TAX-BACKING OF MONEY

Gary M. Pecquet
Central Michigan University

and

Clifford F. Thies
Shenandoah University

INTRODUCTION

During the 1980s, economists addressed the ability of taxes to “back” a currency, both in general and with regard to the historical experiences of the American colonies. The potential implications of the theory are of far more than historical curiosity, and involve such matters as the “convergence criteria” for the introduction of a new currency and the value of an outstanding currency issued by a regime in peril. This paper examines the tax-backing issue with a fresh historical episode, the issuance of Texas Treasury Warrants during the U.S. Civil War. In November 1864, the state of Texas authorized additional emissions of warrants, and enacted new taxes and other fiscal measures designed to support the value of its state-issued currency. Since the Confederacy was soon to fall, this experiment provides a challenging test of the ability of taxes to “back” money.

Sargent and Wallace [1985] addressed the connection between inflation and a certain kind of fiscal balance. Importantly, if a government has a credible commitment to bring its budget into balance, short-term deficits might not undermine the value of a currency that it might issue. But, if deficits exceeded a certain level, accelerating inflation might result. In a series of articles, Bruce Smith [1984; 1985a; 1985b; 1988] investigated the ability of taxes to maintain the values of the currencies issued by the American colonies. Although he was criticized for presuming that specie flow played no role in the monetary dynamics of the period [Bordo, 1986; Bordo and Marcotte, 1987; McCallum, 1992; Michener, 1987; 1988], it can be said that a general sense emerged that the different colonial experiences resulted from different expectations about each government’s commitment to collect the taxes necessary to maintain the value of its currency.

Concern for the tax-backing of the currencies of the American colonies was not original to the 1980s. Adam Smith, in *The Wealth of Nations* [(1776) 1937, 310-2], said

Gary M. Pecquet: Department of Economics, 321 Sloan Hall, Central Michigan University, Mount Pleasant, MI 48859. E-mail: gpecquet@aol.com.

that a limited quantity of fiat currency, receivable for taxes, could be put into circulation and would maintain its value, if the amount were small compared to the amount necessary for taxes.

The paper of each colony being received in the payment of the provincial taxes, for the full value for which it had been issued, it necessarily derived from this use some additional value, over and above what it would have had, from the real or supposed distance of the term of its final discharge and redemption. This additional value was greater or less, according as the quantity of paper issued was more or less above what could be employed in the payment of the taxes of the particular colony which issued it.

Adam Smith argued that a (non-interest bearing) currency not expected to be redeemed (e.g., through tax collection) for some time might be discounted as though it were a zero-coupon bond:

The paper currencies of North America consisted, not in bank notes payable to the bearer on demand, but in a government paper of which the payment was not exigible till several years after it was issued. And though the colony governments paid no interest to the holders of the paper, they declared it to be, and in fact rendered it a legal tender... But allowing the colony security to be perfectly good, a hundred pounds payable fifteen years hence, for example, in a country where the interest is at six percent is worth little more than forty pounds ready money.

Reflecting such a concern for tax-backing, the British Parliament, in the Currency Act of 1764, limited the ability of the colonies to issue (non-interest bearing) currency to the "current service" of government.¹ Wicker [1985] indicates that the Board of Trade attempted to impose such a restriction during the French and Indian War, and had perhaps communicated that the paper money of the colonies issued during that war would be effectively restrained. Then, following the Revolutionary War and with the adoption of the U.S. Constitution, a new monetary order was put into place and the tax-backing issue mostly fell dormant, to be rediscovered during the 1980s.

During the U.S. Civil War, the tax-backing issue was briefly revived. At that time, tax-backing was singularly impressed upon Texas by reason of its experience with paper money during the time of the Republic of Texas. Shortly following its independence, the Republic issued a fiat currency that came to be known as the Red Back. Initially, the amount authorized was limited to an estimate of the demand of the Texas economy for a medium of exchange, and supported by tax collections including, most importantly, import duties. But, this initial limit was soon exceeded by subsequent authorizations. As Sam Houston put it, during his first term as President of the Republic, in a veto message to the Congress of Texas [Gouge (1852) 1968, 79]:

It was hoped and believed, that if a small issue of government paper was made with specific means of redemption pointed out, which appeared to be ample and well guaranteed, and the government should evince a prudent and discreet judgment in its management, it would command such articles in the market of the United States as were indispensable to the country.

Subsequent to his veto, Houston was only able to affect a compromise with the Texas Congress concerning the further issue of paper money; and, the inclinations of his successor, Mirabeau B. Lamar, were to proceed apace with inflationary finance. The value of the Republic's paper money quickly collapsed, both domestically and in the currency markets of New Orleans.²

Texas, along with other Southern states during the Civil War, issued a state currency intended to circulate side-by-side with Confederate currency. But, unlike the other Southern states, Texas continued to make tax payments mandatory throughout the war, and vigorously supported tax collections through foreclosure sales. Then, late in the war, and following a poorly designed currency reform of the Confederacy, the state authorized a substantial new emission and enacted several fiscal measures designed to support its currency. These steps tested the ability of taxes to back a currency under very severe conditions.

This paper continues, in the next section, by examining the finances of Texas during the war. In section 3, the paper examines the fiscal measures taken by the state of Texas to support its currency issue. In section 4, it describes the data collected to test whether these fiscal measures were effective, and conducts a statistical analysis. Section 5 summarizes the findings of the paper, and discusses some of their implications.

THE TEXAS WARTIME FISCAL SYSTEM

During the course of the war, the Confederacy obtained most of its funds through currency issues (62 per cent) and bond sales (20 per cent) [Godfrey, 1978, 14]. However, because of inflation, as early as 1863, the real proceeds from the issue of currency and securities had reached a point of diminishing returns [Burdekin and Langdana, 1993]. Increasingly thereafter, the South turned to taxes upon income and property [Todd, 1954], and, in 1864, it resorted to a drastic currency reform to be described below.

Each of the state governments of the Confederacy had its own financial challenges. At the outset of the war, most of the seceding states borrowed heavily from their banks.³ Subsequently, these states began issuing their own currencies, usually backing them only by the promise to accept them for state taxes and other public dues. However, since almost all of the Southern states suspended mandatory tax collections [Morgan, 1985; Ringold 1966], the tax-backing of their currencies was somewhat nominal. In the states that suspended mandatory tax collection, tax obligations were to accrue until the end of the war; however, taxpayers were usually allowed to make voluntary tax payments in Confederate dollars during the war.⁴

Texas faced its own financial challenges. The state had no banks from which to borrow, as its constitution prohibited banking.⁵ Nor could the state borrow from abroad as it had a poor credit reputation due to the repudiation of the debts of the Republic of Texas [Gouge (1852) 1968].⁶

While Texas had certain problems, it also possessed several advantages. Most importantly, Texas was spared from the ravages of invading armies, and was able to continue collecting taxes through the course of the war. Texas collected property taxes, poll taxes, business taxes and eventually even income taxes. The chief source of tax revenue came from property taxes levied upon the assessed values of land and slaves. Texas supported the collection of property taxes by seizing and auctioning-off the lands of delinquent taxpayers. From 1861 to 1864, the state sold 7.1 million acres in tax forfeiture sales (compared to a total of 17.6 million acres that had been sold to private hands since the beginning of statehood) [Miller, 1916, 141].

A second advantage was that the state owned about 90 million acres of land [*Houston Daily Telegraph*, 14 September 1864]. Initially valued at \$1 per acre, these lands could be, and – through 1864 – were sold to raise funds. Only one other Southern state, Florida, had significant holdings of public land. Texas (and Florida likewise) made only its state-issued currency or gold receivable for land sales.⁷

A third advantage was that Texas railroads owed \$1.8 million to the state's school fund [Reed, 1941, 137]. While the legislature had declared a moratorium on mandatory debt payments for the duration of the war, this asset was used to support the state's currency in another way. In December 1863, the legislature permitted the railroads to pay the interest owed on this debt with Texas state warrants, provided that the same railroads also accepted warrants in payments from customers [Gammel 5, Laws of 1863, 691]. After November 1864, the railroads were further allowed to discharge the principal in state warrants [Gammel 5, Laws of 1864, 820].

Two other advantages of Texas were its ability to trade overland with Mexico⁸ and the use of the state's penitentiary as a manufacturing enterprise. By 1865, the penitentiary produced half of the state's revenue.

As Table 1 shows, through the course of the war, the state of Texas ran something of a surplus. The table can be misleading, however, because it does not indicate the types of currency received. Because of problems such as the timing of cash flows, the composition of currencies received and disbursed, and the collapsing value of Confederate currency during the waning months of the war, as well as because of the state's limited access to capital markets, Texas found it advantageous to issue warrants.

It should be noted that the finances of the state of Texas were significant, being a large fraction of those of the Confederacy within the state. In its Trans-Mississippi department, consisting of Texas and parts of Louisiana and Arkansas, the Confederate Treasury officials collected some \$37 million from taxation during the war [Miller, 1910, 11]. In comparison, examining Table 1, the state of Texas raised \$8.6 million in revenue. Prior to the Confederate Currency Reform, the currency issued by Texas was a small fraction of that issued by the Confederacy that circulated within the state. In February 1864, about \$110 million Confederate treasury notes, plus as many as \$50 million interest-bearing Treasury notes, circulated west of the Mississippi. In com-

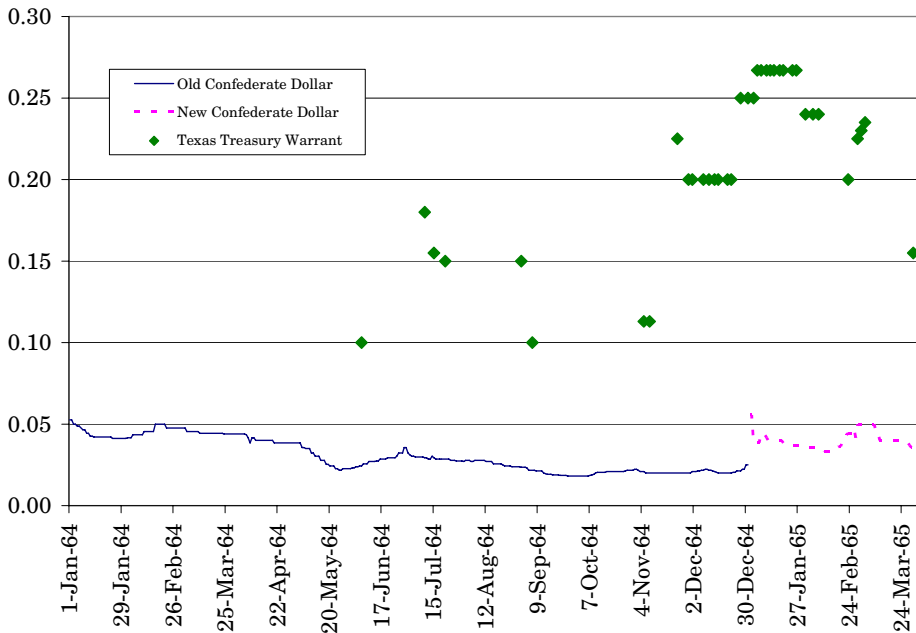
TABLE 1
Texas Budget, 1861 - 1865

	1861	1862	1863	1864	1865
Cash Balance at begin of year	235,428	144,123	256,113	218,297	2,289,401
U.S. bonds released by School Fund		782,000			
Tax Receipts	348,262	323,806	626,602	1,986,003	585,496
Land Sales	22,004	27,474	196,403	154,092	9,721
Penitentiary	0	0	500,000	1,651,908	1,020,803
Miscellaneous	140,277	232,102	158,689	312,211	287,180
Total Revenue	510,543	583,382	1,481,695	4,104,214	1,903,200
Total Expenditures	601,848	1,253,392	1,519,511	2,033,109	824,101
Cash Balance at end of year	144,123	256,113	218,297	2,289,402	3,368,500

Source: Miller [1916, 20]

parison, only \$1.5 million in Texas warrants were then in circulation. However, following the Confederate Currency Reform and the Texas Revenue Act of November 1864, the warrants constituted a large fraction of the currency in circulation within Texas. After January 1865, most of the outstanding currency within the Trans-Mississippi region had been replaced with only \$17 million of new issue Confederate currency, whereas the amount of Texas currency in circulation rose to \$2.1 million [Pecquet, 1987, 222, 236], and the Texas money traded at two to five times the value of the Confederate money (see Figure 1).

FIGURE 1
Gold-value of Currencies in Houston, Jan. 1864 - April 1865



SUPPORTING TEXAS TREASURY WARRANTS

Table 2 gives the amount of warrants outstanding at various times during the course of the war. About \$2.1 million of Treasury Warrants were ultimately placed into circulation.⁹ The first issue was actually made just prior to the war to enable the state to meet a military emergency on the frontier [Miller, 1912, 170; 1916, 140]. By June 1861, these warrants fell to a 50 percent discount on the gold dollar [Ringold, 1966, 87]. By September, about \$291,000 warrants were outstanding, and the state treasury contained only \$36,000 in hard currency [*Comptroller's Report of August 31, 1861* in *Austin State Gazette*, 16 November 1861]. Also by September 1861, Confederate notes began to circulate in Houston. At first, the Confederate dollar traded even with the gold dollar, but by the end of 1861 Confederate notes fell to 67 cents (See the Fox Currency Table [*Galveston Weekly News*, 26 April 1865]).

TABLE 2
Texas Warrants Outstanding

	Interest-bearing*	No Interest	Total
31 August 1861	290,904	0	290,904
31 August 1863	181,565	1,343,923	1,525,488
31 August 1864	179,296	1,443,510	1,622,806
5 August 1865	180,000	1,888,998	2,068,998

* Legislature suspended issue of interest-bearing notes early in the war, and there is no evidence that interest payments were ever made.

Source: Comptroller's Reports as found in various issues of the *State Gazette* (Austin, TX). The final entry is from Executive Record, No. 281 printed in the House Journal of 1866 and published in Miller [1912, 169].

In November 1861, the new Governor of the state made a request for additional warrants. The new warrants were not to be interest-bearing [Gammel 5, Laws of 1861, 478], but fiscal legislation "shall cause them to appreciate to at least near their face value" [Day, 1963a, 49-59]. Similarly, the Confederate Secretary of the Treasury pressured each of the Southern states to support Confederate treasury notes by making them receivable for state taxes and other dues. As shown in Table 3, in January 1862, the legislature consented to each of these requests, making both Confederate notes and state warrants acceptable for the purposes of most Texas tax obligations. From this time to mid 1864, there is no mention of a market value for the state's warrants, from which it can be supposed that they passed on a par with the Confederate dollar (and at the same discount as the Confederate dollar against gold).

At the end of 1863, the Confederate Secretary of the Treasury proposed a drastic currency reform measure that would have immediately converted the outstanding currency into bonds leaving only future currency issues to be receivable for taxes [Yearns, 1960, 203-8]. The Confederate Congress, in February 1864, enacted a compromise measure, the key elements of which involved reducing the value of the outstanding currency by one-third, and forcing the conversion of large denomination notes into 4 percent bonds [Pecquet, 1987, 223-5].

TABLE 3
Receivability of Currencies

(G = gold, C\$ = Confederate Dollar, TW = Texas Warrant)

	Property Taxes	Liquor Taxes	Land Sales	School Bonds – Interest*	School Bonds – Principal*
Jan. 1862	G, C\$, TW	<i>prohibition</i>	G, TW	G	G
Dec. 1863	G, C\$, TW	<i>prohibition</i>	G, TW	G, TW	G
May 1864	G, old C\$ at 1/3 disc, TW	<i>prohibition</i>	G, TW	G, TW	G
Nov. 1864	G, new C\$, TW	G, TW	<i>suspended</i>	G, TW	G, TW

* If a railroad paid in warrants, it had to accept warrants for its charges. These payments were voluntary.

The currency reform was to take effect in the east on 1 April 1864, and in the west on 1 July. The currency reform disrupted Southern markets as people rushed to spend the hundred dollar notes and to hoard the smaller notes [Pecquet, 1987, 225-30]. However, the reform continued to plague the west long after the funding date because the Union occupation of the Mississippi River valley effectively prevented sufficient amounts of new issue from reaching the Trans-Mississippi Treasury to make the currency exchange. By the end of 1864, when the old issue was scheduled to become worthless,¹⁰ \$86 million of the \$110 million old issue had been turned-in to Confederate Treasury officials to purchase bonds or pay taxes. Thereafter, the remaining old issue and the outstanding interest-bearing notes traded as speculative commodities, rather than circulated as a currency, in the Houston market. In their place, only \$17 million in new issue circulated [Pecquet, 1987, 240-1].¹¹

In May 1864, the Texas legislature, in line with the central government's currency reform, resolved to receive "old" Confederate currency for taxes at a discount of one-third. Texas warrants retained their face value, and thus appreciated relative to the "old" Confederate currency [Gammel 5, Laws of 1864, 764-5]. It was at this point that Texas warrants started to be quoted distinctly from Confederate currency. The available quotations from the Houston and Galveston markets were collected by one of the coauthors, and are presented in Figure 1 juxtaposed against quotations on the Confederate dollar in the same market.

From June to September 1864, the warrants fluctuated between six and ten cents in gold, while the Confederate dollar fluctuated between two and five cents. According to the *Houston Daily Telegraph* [15 July 1864], "The scrip being in high demand to pay railroad freights... It is thought that this demand will keep scrip at a high figure, but we doubt it. To fact, the entire income of the railroads compelled to receive the scrip will barely consume an eighth of the scrip now afloat. Those who buy state scrip for hoarding will pay for it a while, though we hardly look to see it much in demand..." The editor of the *Houston Daily Telegraph* was being reasonable. Given the monetary arrangements as of May 1864, as listed in Table 3, it could be anticipated that exchange rate of Confederate dollars for warrants would eventually settle close to their acceptability for state taxes at 1.5 to 1. The state, however, soon substantially altered these arrangements.

Following the Confederacy's currency reform, Texans rushed to pay their taxes in the devalued old currency. By late 1864, the state's coffers were effectively empty.¹²

Moreover, the Confederate troops west of the Mississippi River had been unpaid for over a year [Scheiber, 1959], and as war casualties mounted, the state found itself faced with increasing numbers of impoverished families of soldiers [Escott, 1977, 229]. In order to provide for the destitute and avoid massive troop desertions [Reid and White, 1985, 70-72], Texas needed drastic fiscal changes.

The governor of the state called a second special legislative session, from October to November 1864 [Day, 1963c]. He requested authorization to issue additional warrants and, in order to preserve the value of the warrants, the legislature would have to create a demand approximately equal to the amount issued.

The legislature authorized the Treasury to issue additional warrants to meet the civil expenses of the state and to support the families of indigent troops. The amount of outstanding warrants were expected to increase from about \$1.3 to \$2.0 million during the next fiscal year [Day, 1963c, 90; *Galveston Tri-Weekly News*, 26 April 1865]. Prohibition was repealed and new liquor taxes payable only in warrants or specie were enacted, as the governor had proposed [Gammel 5, Laws of 1864, 820]. The legislature enacted new occupational taxes, also only payable in warrants or specie. Existing property tax rates and form of payment were left in place. Finally, railroads were permitted to discharge both the interest and principal of the debt owed to the state in warrants, rather than only in specie [Gammel 5, Laws of 1864, 815]. Since the warrants traded at ten cents on the dollar before the November legislation, this provision allowed the railroads to discharge their obligations at a bargain. The measure, however, required that the railroads taking advantage of the warrants in debt payments also must accept warrants at par for freight and fares.

Texas had both the ability and willingness to implement the November Revenue Act before its fiscal operations were shut down with the end of the war. The new liquor and occupation taxes were expected to collect \$1 million warrants [Day 1963c, 90] according to the legislature although the editor of the *Galveston Tri Weekly News* [12 December 1864] predicted the measure to absorb a more modest sum of \$550,000. The new taxes actually collected \$300,000 state warrants [Miller, 1910, 16]. The railroads also took advantage of the opportunity to payoff the interest and principal obligations to the Texas school fund in Texas warrants worth only 10 to 20 cents in gold. Since December 1863 Texas permitted the railroads to make interest payments on this debt in warrants worth only about 10 cents in specie. Texas collected \$104,000 warrants from these interest payments. The November Revenue Act that extended the permission to discharge the principal with state warrants collected another \$112,000. It was rumored that the railroads sent out agents to buy up warrants to make these payments [*Galveston Tri-Weekly News*, 12 December 1864].¹³

As shown in Figure 1, the November fiscal measures significantly increased and sustained the value of warrants until the end of the war. The price of warrants increased from 10 to 20 cents in gold. The value of warrants peaked at 28.50 cents in gold in January 1865, and shortly before General Lee's surrender in April, Texas warrants still commanded 15.50 cents in gold. As the war ended, a total of \$2.1 million in state warrants were in circulation. State fiscal policy maintained the value of Texas warrants, even as many more were being put into circulation.

THE DATA AND ITS ANALYSIS

The Galveston and Houston newspapers¹⁴ reported quotations for Texas treasury warrants from June 1864 until April 1865, sporadically at first, and then more regularly. From June until September 1864, the papers occasionally referred to the trading values of Texas warrants. During October 1864 there is a gap, perhaps due to a Yellow Fever epidemic. Then, from November 1864 until March 1865, the newspapers frequently reported wholesale auction quotations for both commodities and currencies.

Often the papers reported a precise trading value for warrants and new issue. Where the reports indicated a trading range, the average of the quotations is used. In March 1865, we found the actual volume on the trades of these financial assets. Auction trades recorded \$6,000 in new issue trading at a price of 3½ to 4 cents in gold and \$2,600 in warrants selling at 15½ cents in gold [*Galveston Tri-Weekly News*, 31 March 1865]. As this report was made near the end of trading in these currencies, it is probable that trading volume had previously been greater.

The quotations we have collected for Confederate currency closely follow the Fox Currency table. The Fox table was compiled by a Houston merchant. It was often quoted by contemporary newspapers, and has become accepted as authoritative for historical research. The correspondence of our quotations for Confederate Currency with the Fox table lends credibility to our quotations for Texas Warrants.¹⁵

The significance of the November 1864 Revenue Act on the value of these warrants was tested using a variety of ordinary least squares regressions. One of the problems was controlling for the effect of battlefield news upon the long-term viability of Texas credit.¹⁶ A second involved the effect of Confederate currency reform on the supply and value of money in Texas [Burdekin and Weidenmier, 2001; 2003; Pecquet, Davis and Kanago, 2004, 628]. We use the gold value of old and new issue to control for these effects. Two of these regressions are reported in Table 4.

TABLE 4
Regression Analysis

Dependent Variable	Gold Value of Texas Warrants	Change in Gold Value of Texas Warrants
Nov. 1864 Revenue Act	0.10 (0.01) [9.35]	0.11 (0.02) [5.01]
Old Issue	5.49 (0.35) [15.91]	4.67 (2.36) [1.98]
New Issue	3.30 (0.26) [12.71]	3.58 (1.34) [2.67]
R ²	79.0%	51.4%
N	38	37

Standard errors in parenthesis, t-statistics in brackets.

In the first regression, the “levels” regression, the dependent variable is the value of warrants in gold. In this regression, the effect of the November 1864 Revenue Act is captured by a dummy variable set equal to one in all observations following 15 November 1864, and to zero otherwise. In the second regression, the “changes” regression, the dependent variable is the percentage change in the value of warrants in gold. Here, the effect of the November 1864 Revenue Act is captured by a dummy variable set equal to one in the observation of 23 November 1864 (the first observation following 15 November 1864), and to zero otherwise.

In the first, “levels” regression, two “background variables” control for the effects of war news and such on Texas warrants, assuming that these events affect Confederate currency and Texas warrants similarly. The first of these two variables are the gold value of old issue through 31 December 1864 (which is set equal to zero otherwise), and the second is the gold value of new issue commencing 1 January 1865 (which is set equal to zero otherwise). These background variables are both highly significant, indicating that war news and such affected the state-issued currency of Texas much the same way they affected the Confederate dollar. The coefficient on the variable of interest, also highly significant, indicates that the November 1864 Revenue Act raised the value of warrants by 10 cents.¹⁷

In the second, “changes” regression, an analogous pair of background variables is employed, namely, the change in the gold value of old issue Confederate currency (through 31 December 1864), and the change in the gold value of new issue Confederate currency (commencing 1 January 1865). In this regression, the effect of the November 1864 Revenue Act is captured by a dummy variable set equal to one in the observation of 23 November 1864, and to zero otherwise. This construct presumes that the market is efficient (so that the entire effect of the event is captured upon the news of the event), and that there was no prior “leakage” of the news. Results are similar to those discussed with regard to the first regression. In particular, the November Revenue Act is indicated to have increased the gold value of warrants by 11 cents.

DISCUSSION

As documented by others, the quantity of Confederate currency fell, and the gold value of the Confederate dollar was stabilized in Texas following the Confederate currency reform and the inability of the Confederacy to exchange its new issue for its old issue in the Trans-Mississippi region. This study indicates that – following the subsequent Texas Revenue Act of November 1864 – the state of Texas was able to increase in value of its warrants relative both to gold and to the Confederate dollar, even while putting another 25 percent into circulation. The Texas warrants, which had already appreciated following the Confederate currency reform, approximately doubled again in value relative to gold and to the Confederate dollar following the Texas Revenue Act. Without the support provided by vigorous tax collection and other fiscal measures, it is likely that the Texas warrants would have fallen in value along with the Confederate dollar during the final months of the war. The state of Texas might have had to put increasing quantities of warrants into circulation to fund its

operations, at the risk of engendering an inflationary spiral. As it was, the enhanced tax-backing of the warrants was instrumental in enabling the state of Texas to continue to function, even following Lee's surrender, until Union forces actually overran the state. Given the adverse circumstances that were involved in this experiment, the importance of fiscal balance for monetary stability is strongly indicated.

NOTES

1. The New England colonies had already been made subject to such a restriction through the Currency Act of 1751.
2. Ironically, it was Houston, again serving as President, who presided over the repudiation of the debts incurred by the Republic.
3. These bank loans have been described most recently in Pecquet, Davis and Kanago [2004, 618-619]. Earlier accounts of this can be found in Schweikart [1985; 1987, 284-96; Godfrey, 1978, 79], and Schwab [1901, 124-31].
4. For a description on the suspension of mandatory tax collections and voluntary tax payments in Louisiana see Pecquet [1988, 256-62 and 287-9].
5. One bank operated in Texas until 1858 because it had been chartered before Texas Independence. It was closed before the war began [Carleson, 1930, 1-18]. It might be noted that the constitution of Texas also prohibited its legislature to issue any paper "intended to circulate as money." This prohibition was "honored" by canceling warrants upon their return to the state treasury, which thereupon issued "new" warrants instead of re-issuing the "old." Canceled warrants were included as a budgetary expenditure in the table. Miller [1910, 13] shows the annual receipts of warrants absorbed into the treasury for 1861, \$12,000; 1862, \$28,000; 1863, \$334,000; 1864, \$394,000; and, 1865 \$180,000.
6. In April 1861, the legislature attempted to raise funds by issuing \$1 million in 8 percent bonds [Ramsdell, 1924, 255]. An agent was sent to New Orleans to sell the bonds, but found no buyers.
7. For a history of Florida Civil War finance and the use of state lands to support Florida notes, see Thomas [1907] and Johns [1963, 97-111].
8. The overland cotton trade with Mexico has been discussed in Bewes [1961], Daddysman [1984], Kerby [1972], Nichols [1964], Parks [1954] and Tyler [1970]. Ramsdell [1924, 267 and 272-3] discusses the participation of the state government of Texas in this trade.
9. Two leading Confederate monetary historians have reported a wide discrepancy about the number of Texas warrants. Godfrey [1978, 106] indicated \$2.1 million warrants were outstanding at the end of the war while Ball [1991, 168] places the figure at \$8 million. Neither author provided an adequate explanation for his figures. Nonetheless, the Texas state auditor regularly published the amounts of outstanding warrants that were consistent with the figure of \$2.1 million. Moreover a post-war commission set up to account for the Texas indebtedness placed the outstanding warrants at \$2.1 million. The overall Texas debt was approximately \$8.1 million [Miller, 1912].
10. On 29 December 1864 the Confederate Congress extended the deadline for funding old issue until 1 July 1865 [Ramsdell, 1941, 12-13], but this happened much too late to affect behavior in the Trans-Mississippi.
11. The relative scarcity of Confederate money kept prices much lower in Houston compared to Richmond during the last stages of the war [Burdekin and Weidenmier, 2001].
12. In June 1865, the Texas treasury was stuck with \$2.9 million in Confederate notes, most of it old issue of little use as currency [Miller, 1910, 19].
13. During reconstruction, the state challenged the legitimacy of these payments. The state argued that warrants were invalid on three grounds: First, warrants violated the state constitution because they had been intended to circulate as money; second, they were "bills of credit" and therefore violated the U.S. Constitution; and, third, they had been issued in aid of the rebellion and therefore violated the 14th Amendment. In 1899 the U.S. Supreme Court ruled against Texas and in favor of the railroads. The Court held the state of Texas had already accepted the warrants and could not reverse itself. [Miller, 1910, 18]

14. These were the Houston Daily Telegraph, Houston Tri-Weekly Telegraph, Galveston Tri-Weekly News and Galveston Weekly News, the later two of which were published in Houston during the war following the Union occupation of Galveston.
15. The warrant prices we have collected for the Houston market are consistent with the few prices of warrants we have been able to locate in other markets, relying on the Austin State Gazette, Dallas Herald, San Antonio Herald and Shreveport Semi-Weekly News, except that in West Texas markets, paper moneys tended to exchange at higher values than in Houston, perhaps reflecting that these markets were closer to Mexico and a source of specie.
16. The literature is replete with articles attesting to the effects of battlefield events upon Confederate currency [Davis and Pecquet, 1990; Grossman and Han, 1996; Weidenmier, 2002]. Further evidence of battlefield events on the Greenback market has been shown by Calomiris [1988], Mitchel [1903], and Willard, Guinnane and Rosen [1996]. The impact of Confederate fiscal policies upon the Greyback has recently been investigated by Burdekin and Weidenmier [2003].
17. Other regressions, involving a constant, a trend variable, and a days since last quotation variable, each of which proved insignificant, delivered similar results.

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